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(54) **CLUSTERING LOCATION AND TIME FOR LOCATION PREDICTION**

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See application file for complete search history.

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(57) **ABSTRACT**

The invention is directed to methods for predicting future locations based on time clustering. Historical location data from a particular period of time is used to identify locations or places. The period of time is divided into even time slots. For each time slot, a probability distribution is computed by calculating a probability that the mobile device is located at each identified location during that time slot. The time slots are clustered into time slot groups based on similar probability distributions. For each time slot group, a probability distribution is calculated representing a probability that the mobile device is present at each location during the period of time defined by the time slot group.

**19 Claims, 7 Drawing Sheets**

